Second, econometric techniques have not demonstrated a statistically significant relationship between individual services and general overhead expenses, perhaps because there is little independent variation in LECs' scopes of services or because there is no such relationship.[2]

Finally, the very nature of many costs is clearly shared. Resources (such as certain rights to use fees, computer programming, and general organizational activities) are performed once without the need to expand the scale of activities to accommodate greater volumes of business including adding products or services.

Q. DO YOU BELIEVE THAT A LEC HAS CHARACTERISTICS WHICH CAUSE IT TO TEND TO HAVE A HIGHER PROPORTION OF SHARED COSTS THAN OTHER COMPETING FIRMS?

A. Yes, there are several factors which I believe will cause a LEC, like BellSouth, to tend to have a higher proportion of shared costs than other competing firms. These factors include: 1) a large number of services offered; 2) network-based service provision; 3) a franchise obligation to provide ubiquitous service over broad geographic areas; 4) large scale and lumpy investment characteristics; 5) predominance of services rather than products; and 6) "leasing" of virtually no unbundled components from other providers.

---

[2] There certainly is a relationship between a LEC's overall size and its shared and common costs. There is no evidence, however, that size measured by the firm's Scope of services matters; it appears that all costs (TSLRIC, shared, and common) are all proportionately smaller, perhaps because the population, geography, and/or overall operations are smaller.

Q. WHAT DO YOU MEAN WHEN YOU SAY LEC'S ARE "LEASING" VIRTUALLY NO UNBUNDLED COMPONENT?

A. I have used the term "lease" in a generic sense to mean using the facilities of others (at a price) rather than buying or building one's own facilities. LECs will tend to own rather than lease facilities. In contrast, a high proportion of Inter Exchange Company (IXC) and Competitive Local Provider (CLP) costs may be comprised of expenditures to lease facilities from LECs. At one point in time, AT&T claimed that approximately 60% of its toll revenues were paid to LECs for access services. Therefore, the leasing of LEC facilities (i.e., access payments) became part of the direct cost or incremental cost of AT&T's toll service. A CLP, too, may lease a significant proportion of its facilities from LECs and, therefore, will necessarily have a higher proportion of incremental costs and a smaller proportion of shared costs, vis-à-vis the LECs. To illustrate, the cost of leasing meeting rooms is generally more "variable" (with respect to use) than is owning one's own facilities. Thus the incremental cost of any given type of use would be higher for leased rooms.

Q. IF A NETWORK-BASED COMPANY LIKE BELLSOUTH IS REQUIRED TO SET RATES FOR EACH SERVICE JUST SUFFICIENT TO COVER TOTAL SERVICE LONG-RUN INCREMENTAL COST (TSLRIC), WILL THAT COMPANY RECOVER ALL OF ITS COSTS AND EARN A REASONABLE PROFIT?

A. No, it will not. Service prices which only generate total revenue equal to the sum of all service incremental costs will not cover total cost. As I have discussed, there are shared costs incurred by a company, especially a multiservice network-based company like BellSouth, which are *not* incremental to any one service but which are never the less valid costs of engaging in its business activities. In total, service revenues must exceed service incremental costs by a margin sufficient to recover all costs of the firm, including the shared costs of the firm. Even if it were determined that some costs presently categorized as shared and common were incremental after all, prices would need to cover those higher costs and contribute toward the remaining (nonincremental) costs. To simply assure that each service does not receive a subsidy, by establishing all service prices at, or slightly above, TSLRIC, does not guarantee that a provider recovers all of its costs. BellSouth cannot be said to have priced its services to attain a reasonable profit until its prices are set sufficiently above TSLRIC to recover its shared costs. In short, if BellSouth is required to set service prices at TSLRIC, with no provision for shared costs which must necessarily be incurred to provide business services, then it can not earn a profit on those services.

Q. CAN YOU ILLUSTRATE THIS POINT WITH A NUMERICAL EXAMPLE?

A. Yes. Consider products A & B each with an incremental cost per unit of $.25 and with demand of 100 for each service. The incremental cost for the sum of the units demanded is $25 for A and $25 for B. However, to produce either A or B the firm must also spend $50 per period on a right-to-uses fee; say a computer operating system. In this simple example, the $50 is a shared cost of these two

products. The firm has found a source of economic efficiency: it can produce both A and B spending $50 once rather than twice (once for each product). Obviously, if the prices per unit of both services A and B are forced to equal their incremental costs of $.25, the firm will face a loss of $50 per period. Similarly, if the firm is forced to price one of its services at incremental cost, the firm will face a loss unless it can double the contribution margin on its remaining service. The greater the efficiencies of sharing facilities and costs, the larger the shared costs of the firm and the greater the need to price services in excess of LRIC. In other words, such increased efficiencies will increase shared costs but with a more than offsetting reduction in incremental costs. However, these larger shared costs must be recovered for the firm to remain in business.

Q. ARE SHARED FACILITIES AND SHARED COSTS BENEFICIAL?

A. Yes, the increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; forcing service prices equal to TSLRIC does not allow for the recovery of the shared costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared costs. To illustrate this, recall products A and B described earlier where the incremental costs per unit for each is $.25, the shared cost is $50, and 100 units of each service are demanded. Consider what occurs if a new machine becomes available which costs $75 per period but which reduces the incremental cost of both services from $.25 to $.10. With demand for A and B at 100 units the new machine offers the opportunity to reduce total costs from

$100 to $95 (i.e., $75 + $10 + $10). Society is clearly better off with the use of the new machine; however, if the company is artificially constrained to price any of its services at incremental cost, it is difficult for the company to make the economic decision which is best for society.

Competition Tends to Drive Prices to Costs (Including Shared Costs)

Q. YOU RECOMMEND REJECTING THE PROPOSAL TO PRICE SERVICES OFFERED TO OTHER TELECOMMUNICATIONS PROVIDERS AT TSLRIC. DOESN'T COMPETITION DRIVE PRICES TOWARD COSTS?

A. Yes, it does. However, competition does not necessarily drive prices to TSLRIC.[3] Competition tends to drive prices to a point where all valid business costs are just recovered, and shared costs are valid costs of business activity. When competition drives prices toward costs, these shared costs are a component of the costs a provider must recover, even in the most competitive of markets.

Q. SHOULD PRICES FOR INTERMEDIATE SERVICES (I.E., SERVICES NOT SOLD TO END USERS) BE ALLOWED TO MAKE A CONTRIBUTION TO HELP RECOVER THE SHARED COSTS OF A FIRM?

[3] If a firm only provides a single product, all of its costs are generally included in a calculation of TSLRIC. Because the majority of the economics literature implicitly or explicitly deals with single product production, a casual reading of parts of the economics literature would lead one to believe that competition drives prices toward LRIC; this is true only for a single product firm.

A. Yes, in a competitive environment, every activity must be allowed to make a reasonable contribution to help recover the shared costs of the firm. Many firms strictly offer business-to-business services, i.e., they only offer intermediate products or services to other firms and do not sell to end-users.[4] Many of these firms may have substantial shared costs which must be recovered from the prices of the intermediate products or services which they sell to other firms. In general, firms in real markets selling intermediate services have shared costs which must be recovered through the prices of the intermediate products or services which they sell to other firms. It is obvious in these instances that providers must obtain a reasonable contribution from each intermediate service or they will be unable to continue in business.

Even Intermediate Services Sold to Competing Providers Should Not be Precluded From Making a Contribution Toward Shared Costs

Q. IF ONE ASSUMES THAT ONE OR MORE OF THE SERVICES IN THIS PROCEEDING IS A MONOPOLY SERVICE, OR AN ESSENTIAL SERVICE, SHOULD THAT SERVICE BE PRECLUDED FROM

[4] Catalogs and directories exist for "business-to-business" products and services; many of these products are used as components or inputs to produce products for final consumers. Some of the firms which are largely or completely intermediate-products firms are obvious and well known such as Intel, Boeing, McDonnel-Douglas, U.S. Steel, Alcoa Aluminum, or Peabody Coal. However, many other firms which one might consider as final goods producers, such as Beatrice Foods, Detroit Diesel, Kellogg, Phillip Morris, Proctor & Gamble, or Frito Lay, provide relatively few, if any, products to end users. These firms rely on other firms to actually provide products to end users. Certainly, any firm which only provides intermediate services must recover all of its shared costs from those intermediate services.

PROVIDING A REASONABLE CONTRIBUTION TOWARD THE SHARED COSTS OF THE LEC?

A. No, all services should be allowed to provide a reasonable contribution to the shared costs of the LEC.

First, it is likely that the reason a service or service element is essential precisely because it is produced most efficiently as a unique element in the supplier's scope of services buy sharing costs.[5] Thus there necessarily would be shared costs to be recovered.

Second, it is possible that a telecommunications provider would *only* provide services which some customers would consider to be "monopoly" or "essential" services. Such classifications do nothing to make the shared costs of a firm disappear or be magically recovered elsewhere. Under such a rule, a LEC which provides some "monopoly" or "essential" services as well as other services, would be faced with attempting to recover most if not all of its shared costs from the "other" services at a time when expanding competition makes it difficult or impossible to obtain such contribution.

[5] An essential facility is a component which cannot be equally efficiently produced, acquired or substituted by another firm. This occurs when one firm has economics of scope which cannot be replicated by another firm. These economies are the very source of shared and common cost which would not be recovered with prices equal to incremental costs.

Q. WOULD THE MCI POSITION, THAT UNBUNDLED NETWORK ELEMENTS (UNES) BE PRICED AT INCREMENTAL COST, LEAD TO PERVERSE RESULTS AS LOCAL COMPETITION EXPANDS?

A. Yes, it would appear that MCI may not object to service prices which are above incremental cost (indeed, MCI prices above its incremental costs to recover its unique shared and common costs); rather, MCI objects to prices of what it claims are monopoly components which are greater than incremental cost and which provide some contribution to the shared costs of the LEC. As MCI or other companies enter the facilities-based segment of the market and offer equivalent or alternative UNEs, these companies, like BellSouth, will need to recover their joint and common costs. A market price will emerge which, in all likelihood, will be higher than BellSouth's incremental cost. It appears that MCI would then allow BellSouth to raise its prices for these services which would lead to higher end user prices. Therefore, under the MCI proposal, as local competition expands, prices for unbundled intermediate component services (which were previously considered as monopoly components) would be allowed to rise in order to contribute to the significant shared costs of the LEC. This leads to the perverse result that the expansion of local competition would lead to increased prices rather than decreased prices.

In contrast, starting with intermediate services priced to correctly provide a reasonable contribution toward shared costs could emulate competitive results from the outset of the establishment of the unbundled services.

Q. ISN'T IT UNFAIR FOR A CLP TO PAY MORE THAN THE TSLRIC FOR A SERVICE IF IT BELIEVES THAT IT NEEDS THAT SERVICE TO PROVIDE ITS OWN SERVICES?

A. No, it is not. The incremental cost of services represents only a portion of the total costs of a LEC. LEC shared facilities and shared costs are shared by end-user services by those interconnecting with the LEC, and by those who use the LEC's unbundled facilities to which their value added services are appended. This is especially true in the increasingly competitive environment today. Similarly, I expect that each of the components or intermediate services which the CLP purchases from *other* sources (such as switch providers and other carriers) are priced to provide a reasonable contribution to the shared costs of those other suppliers. I don't expect MCI to provide services to a reseller at TSLRIC even though the reseller may need the services it receives in order to provide its own services. I don't expect MCI to price its own access services at TSLRIC. As a general matter, I expect that a CLP "needs" most of the facilities and factors of production they purchase, not just the ones they purchase from a LEC; however, this does not preclude prices for each of these components from generating a contribution to its provider.

Q. DOESN'T A CLP HAVE TO RECOVER ALL OF ITS SHARED COSTS FROM END-USER SERVICES?

A. No, I expect that most CLPs will obtain some contribution from both intermediate services (including access services to IXCs) and end-user services.

The very nature of competition to date, with the terms "alternative access vendor" or "competitive access provider" indicates that providing intermediate services (e.g., access to IXCs) will be a significant service and a source of contribution. To the extent that the CLPs have shared costs, I expect they must obtain contribution from both intermediate and end-user services. Every firm must recover its shared costs from the services it provides. For example, to the extent that a CLP only provides access services to IXCs, it must obtain all of its contribution, to recover its shared costs, from those intermediate services.

However, the critical distinction is that the CLP has the opportunity to utilize the ubiquitous facilities of the incumbent LEC when and where it chooses. An LEC facing a franchise obligation has no such opportunities.

Forcing LECs to price intermediate services at TSLRIC would allow CLPs to utilize the shared facilities and shared costs of the LEC ubiquitous network when and where they choose without contributing to the recovery of LEC shared costs. By doing so, the CLP would avoid incurring the associated shared and common costs. Without a contribution from intermediate services, the LEC's end-user customers must provide *all* of the contribution to cover its shared costs; however, both the LEC's end-user customers and the CLPs purchasing unbundled LEC component services share in the capabilities of the LEC's ubiquitous network.

Q. HOW ARE THE CIRCUMSTANCES FOR THE INCUMBENT LEC AND THE CLP DIFFERENT?

A. CLPs will benefit from the incumbent's economies of scope. When an incumbent LEC provides an unbundled loop, for example, the incumbent LEC does not share in the benefits associated with any shared costs of the CLP purchasing the unbundled loop. Even with local interconnection, it is the incumbent LEC which has placed a ubiquitous network of facilities in advance of the demand for services in order to satisfy carrier of last resort obligations to serve customers in a timely fashion. Facilities-based CLPs have far greater latitude to build facilities if, when, and where they choose, utilizing the facilities of the LECs in all other instances. The reverse is not true at this time.

Q. IF THE LEC IS PRECLUDED FROM OBTAINING A REASONABLE CONTRIBUTION FROM INTERMEDIATE SERVICES, WHAT WILL BE THE EFFECT ON THE LEC'S END-USER CUSTOMERS?

A. The burden on LEC end-user customers of recovering shared costs will continually increase in such a scenario. Assume that BellSouth's total costs are $100, with $50 of shared costs and $25 of incremental costs for residential local service and $25 of total incremental costs for all other services. Also assume that residential service generates $25 in revenue, just covering its incremental costs. Initially then, on average each service (other than residential local service) must generate $2 in contribution for each $1 of incremental cost; i.e., the other services must provide on average 200% contribution to recover the $50 of shared costs.[6]

[6] For simplicity we ignore demand elasticity in this example without loss of generality.

For simplicity, also assume that BellSouth initially had 100% market share of the other end-user services in its territory. Later, other end-user service providers enter by purchasing unbundled loops and other unbundled BellSouth facilities which are priced at incremental cost, capture 50% of the end-user market for these other services. BellSouth must now obtain $4 in contribution above its incremental costs (i.e., a 400% contribution) from each of *its* end-user customers. If residential local service is subsidized to some degree, as the economics literature suggests, then the contribution levels must be even higher in each scenario.

Peculiarly, both the new end-user service providers (CLPs) and BellSouth explicitly or implicitly utilize at least a portion of BellSouth's shared facilities and receive some of the benefits of its shared costs. However, when unbundled components are priced at incremental cost, only BellSouth end-user customers will pay for the benefits of the shared facilities and shared costs. Obviously, this creates an artificial advantage for CLPs and an unsustainable disadvantage for BellSouth.

Q. IF THE LEC IS FORCED TO PRICE INTERMEDIATE SERVICES AT TSLRIC, WOULD THE EXISTENCE OF A RATE CAP FURTHER CONSTRAIN THE LEC'S ABILITY TO RECOVER ITS SHARED COSTS?

A. Yes, absolutely. Without contribution from its intermediate services, the LEC will be forced to attempt to raise prices for its services offered to end-user

customers. Obviously, the existence of a rate cap on end-user services would constrain or preclude such shared cost recovery.

PRICING UNES AT INCREMENTAL COST WOULD RETARD THE GROWTH OF FACILITIES-BASED COMPETITION

Q. DOES PRICING UNES AT INCREMENTAL COST PROVIDE AN INCENTIVE FOR FACILITIES BASED COMPETITION?

A. Certainly not. A competing firm would virtually never choose to take the risk of constructing facilities when it has the opportunity to "lease" unbundled components from the incumbent LEC priced *at incremental cost*. First, the lessor avoids incurring the shared cost altogether. Further the competing provider can lease facilities priced at incremental cost at the time, scale, location and duration of its choosing and it can change any of these factors as market conditions change. Even its incremental costs can be abruptly reduced, unlike the costs to the owners of the leased facilities. Pricing unbundled components at TSLRIC will essentially guarantee that alternative providers will construct no new facilities to compete with the incumbent LEC. This, of course, is contrary to both economic efficiency and the job-promoting intentions of the Telecommunications Act of 1996.

THE FCC'S UNE PRICING STANDARDS AND COST TERMINOLOGY

Q. WHAT PRICING STANDARD IS ESTABLISHED BY THE TELECOMMUNICATIONS ACT OF 1996 FOR INTERCONNECTION AND UNBUNDLED NETWORK ELEMENTS?

A. Section 252(d)(1) of the Telecommunications Act of 1996 (hereinafter the "Act"), regarding pricing standards for interconnection and network element charges, states as follows:

> Determinations by a State commission of the just and reasonable rate for the interconnection of facilities and equipment for purposes of subsection (c)(2) of section 251, and the just and reasonable rate for network elements for purposes of subsection (c)(3) of such section (A) shall be (I) based on the cost (determined without reference to a rate -of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and (ii) nondiscriminatory, and (B) may include a reasonable profit.

Q. IN ITS RECENTLY RELEASED ORDER OF AUGUST 8, 1996,[7] WHAT METHODOLOGY DID THE FCC CONCLUDE SHOULD SERVE AS THE BASIS FOR PRICING UNBUNDLED NETWORK ELEMENTS?

A. The FCC concluded that the price for an unbundled network element should be based on the LEC's total service long run incremental cost (TSLRIC) of that particular network element (which the FCC calls "Total Element Long-Run

[7] FCC Interconnection Order I.

Incremental Cost," or TELRIC), plus a reasonable share of forward-looking joint and common costs.[8]

Q. PLEASE DEFINE THE MEANING OF THE ACRONYM TELRIC.

A. The acronym TELRIC actually stands for Total Element Long Run Incremental Cost and it is a terminology coined by the FCC in its recent order[9] dealing with the implementation of the unbundling and interconnection aspects of the Telecommunications Act of 1996. However, even within the FCC's order itself there are alternative applications of this term.

Q. HOW IS THE TERM TELRIC USED DIFFERENTLY IN THE FCC ORDER?

A. The term TELRIC, in many places of FCC Interconnection Order I, is used to denote a methodology for developing costs of a set of functions, deemed to be those that proposed competitors either want or need in order to compete with the incumbent company. However, FCC Interconnection Order I also refers to the term TELRIC when referencing a mechanism for setting a price for these proposed functions. The use of the same terminology to refer to two very different disciplines creates a multitude of opportunities for confusion in the application of these principles going forward.

---

[8] FCC Interconnection Order I, paragraph 29 and 672.

[9] FCC Interconnection Order I, paragraph 678.

Q. HOW DOES THE TELRIC COST METHODOLOGY DIFFER FROM A TSLRIC OR TOTAL SERVICE LONG RUN INCREMENTAL COST METHODOLOGY?

A. From a cost methodology perspective, specifically excluding pricing considerations and joint or common allocations, there should be no difference in the actual cost methods; only a change in the *cost object* under study. The same principles of cost causation and identification should be used to determine the incremental cost of an element, or a service.

Q. IF THE SAME METHODS, AND THE SAME INPUTS, ARE USED FOR BOTH TELRIC AND TSLRIC STUDIES, HOW WILL THE RESULTING AMOUNTS BE DIFFERENT?

A. A very basic principle is that the result of a cost study is highly interdependent with the question that is being posed. If one assumes that the purpose of a TELRIC study is to develop a price floor (again, excluding the reference to a TELRIC price methodology) for a particular network function then the question is no longer "What is the cost to the company to provide an additional unit of service or product?" Instead, the question has been changed to "What is the cost to the company of providing an element or function of the network in its entirety, without regard to the services consuming it?". For example, in the case of a TSLRIC study conducted for a particular service, the direct cost of the service would not include any costs that are shared among other services using that capacity of the network. However, a TELRIC study conducted on the

elements of the previous service would include as direct costs some of the costs that were identified as shared in the service specific study. Pricing issues aside, the alignment of the cost object under study with the actual network structure in terms of how costs are incurred will serve to reduce shared costs and, instead, drive them to be a direct cost of the object under study.

Q. IF THIS IS TRUE, AND SERVICES ARE CONSTRUCTED DIRECTLY FROM THESE ELEMENTS, CAN THESE ELEMENTS JUST BE ADDED TOGETHER TO OBTAIN THE COST FOR ANY SERVICE?

A. No. As I stated above, the determination of cost for any particular service includes considerations over and above the determination of the elements of which it is constructed. In the previous example, the price floor for an element used in the provision of the service would consider "spare" capacity as a shared cost, to be recovered through prices. If, instead, the study were considered the sum of previously constructed TELRIC studies, that shared cost would have been included as a direct cost of each element and the resulting service "cost" would have a *de facto* allocation of shared costs among all services studied in this manner.

Q. MCI'S PETITION ASKS THIS COMMISSION TO PRICE UNE'S IN ACCORDANCE WITH THE FCC'S TELRIC METHODOLOGY.[10] SHOULD

[10] MCI's Petition for Arbitration at page 11.

THE RATES FOR UNES BE SET EQUAL TO TOTAL ELEMENT LONG RUN INCREMENTAL COST (TELRIC)?

A. No. FCC Interconnection Order I clearly states that prices for interconnection should not only recover the TELRIC of a particular network element, but prices should be set *above* TELRIC in order to recover the shared and common costs of the firm:

> We conclude that, under a TELRIC methodology, incumbent LECs' prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs.[11]

In other words, a reasonable contribution[12] must be made toward BellSouth's residual shared and common costs (sometimes called "joint and common costs").

Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN TELRIC AND TSLRIC AS IT RELATES TO SHARED AND COMMON COSTS.

A. The FCC suggests that the amount of costs that will be directly attributable will be greater under a TELRIC methodology than a TSLRIC methodology:

---

[11] FCC Interconnection Order I, paragraph 682.

[12] By "reasonable contribution", I refer to the level of contribution which would be obtained according to effectively competitive market conditions. It is *possible* that this contribution may be minimal or even zero if market conditions so indicate. Such conditions do not exist in local exchange companies.

Therefore, the amount of joint and common costs that must be allocated among separate offerings is likely to be much smaller using a TELRIC methodology rather than a TSLRIC approach that measures the costs of conventional services.[13]

Q. SINCE MORE COSTS WILL BE DIRECTLY ATTRIBUTABLE UNDER A TELRIC METHODOLOGY THAN A TSLRIC METHODOLOGY, HENCE LEAVING A SMALLER AMOUNT OF COMMON COSTS TO BE RECOVERED, WHY THEN DO PRICES STILL NEED TO BE SET ABOVE TELRIC, RATHER THAN EQUAL TO TELRIC?

A. TSLRIC methodology results in common costs which cannot be attributed to individual services. The amount of these common costs is very significant. Although TELRIC methodology aims to reduce the amount of these common costs, there is no doubt that there will still be a significant amount of common costs which will not be directly attributable to network elements. As explained previously in my testimony, however, the actual amount of common costs will depend on how network elements are defined.

The greater the efficiencies of sharing facilities and costs, the larger the shared and common costs of the firm and the greater the need to set prices in excess of

[13] FCC Interconnection Order I, paragraph 678.

TELRIC.[14] In other words, such increased efficiencies will reduce incremental costs but increase shared and common costs. However, these shared and common costs must be recovered for a firm to remain in business.

The increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; pricing at TELRIC does not allow for the recovery of the shared and common costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared and common costs.

Q. IF PRICING AT TELRIC LEAVES SHARED AND COMMON COSTS UNRECOVERED, SPECIFICALLY HOW SHOULD PRICES BE SET TO GENERATE THE ADDITIONAL REVENUE REQUIRED TO COVER THESE COSTS?

A. Prices should be set based on market conditions in such a way that the contributions from all services (revenues in excess of incremental costs) are sufficient to cover the shared and common costs of the firm. It is the value of the service to the customer and the market conditions for that service, not cost-based formulas, which will determine how shared and common costs can be recovered in the marketplace. Every network element should provide a

---

[14] The efficiencies due to sharing facilities and costs in the provision of multiple services are sometimes called economies of scope. This is similar to, but may be distinct from, the concept of economies of scale which reflects cost savings from large scale production of a particular (a single) product or service.

contribution toward shared and common costs, based on market conditions. The market place is where prices should be determined. Dr. Alfred Kahn is very emphatic about this point as explained in the following editorial:

> The FCC should simply get out of the way and leave the decisions to investors and consumers. The commission should call off its cost-allocation rule making, leave the prices of regulated services where they are and let the market work.[15]

Q. DR. GOODFRIEND CONTENDS THAT THE FCC'S TELRIC METHODOLOGY REQUIRES STUDYING COSTS AS THOUGH BELLSOUTH IS DIVIDED INTO WHOLESALE AND RETAIL SUBSIDIARIES AND ONLY THE RETAIL SUBSIDIARY PUTS NETWORK ELEMENTS TOGETHER.[16] IS THIS A SOUND METHODOLOGY?

A. No. Putting aside the question of whether her interpretation of the FCC's rules is correct, such a method fails to allow for incremental cost estimates that reflect the cost savings stemming from vertical integration. According to Professor Morris Adelman of MIT, economists describe a firm like BellSouth as vertically integrated "when it transmits from one of its departments to another a good or service which could, without major adaptation, be sold in the market."[17] In his book on antitrust and regulatory economics, Professor Daniel Spulber of

---

15 Kahn, Alfred E., "Ask Not the Bells for Tolls," *Wall Street Journal*, August 6, 1996, page A14.

16 Direct Testimony of Sarah Goodfriend on Behalf of MCI, Docket No. P-141, Sub 29, at page 21.

17 M. A. Adelman, "Integration and Antitrust Policy," 63 *Harvard Law Review* 27 (1949) at 27.

Northwestern University explains that cost savings may result from vertical integration because of *economies of sequence*.[18] Cost estimating methods that refuse to allow for the presence of economies of sequence could easily overstate the costs of bundled retail offerings and competitively disadvantage BellSouth.

THE COMMISSION SHOULD REJECT USE OF THE HATFIELD MODELS

Q. HAS MCI PROPOSED UTILIZING A HYPOTHETICAL MODEL OF TELECOMMUNICATIONS SERVICES?

A. Yes. Dr. Sarah Goodfriend and Mr. Don Wood have recommended that the NCUC rely on the Hatfield models for purposes of determining the incremental costs of interconnection and unbundled network elements.[19]

Q. DO YOU AGREE WITH THEIR RECOMMENDATION?

A. No. There are a series of models and releases by Hatfield and associates which can generically be called "Hatfield Models." These models cannot be relied upon to provide sound and reliable estimates of TSLRIC costs of telecommunications services or elements. My comments are based on my review of the

---

[18] Daniel F. Spulber, *Regulation and Markets* (Cambridge, MA: MIT Press, 1989), pp. 118-120.

[19] Direct Testimony of Sarah Goodfriend on Behalf of MCI, Docket No. P-141, Sub 29, at pages 26 and 40. Direct Testimony of Don J. Wood on Behalf of MCI, Docket No. P-141, Sub 29, at pages 13-14.

documentation of these models, my experience with such cost estimation models in general, including those produced by my own company, my discussions with other modelers, my knowledge of traditional engineering/economic cost models, and my knowledge of the types of data which are utilized in such systems.

Q. BASED ON YOUR KNOWLEDGE, DO THE HATFIELD MODELS UTILIZE METHODS WHICH ARE RELIABLE FOR ESTIMATING TSLRIC COSTS FOR UNBUNDLED NETWORK ELEMENTS?

A. No. It appears that the Hatfield models do not provide a reliable method for estimating TSLRIC costs for unbundled network elements. Hatfield models do not reflect the costs of an actual network, they produce a variety of errors, and perhaps most importantly, certain aspects of the modeling process appear to significantly bias the cost estimates downward.

Q. DO THE HATFIELD MODELS PROVIDE A REASONABLE ESTIMATE OF THE COSTS OF AN INCUMBENT LEC OR A NEW ENTRANT?

A. It appears that Hatfield models do not provide a reasonable estimate of either a new entrant or an incumbent LEC. The Hatfield models do not reasonably estimate the costs of an existing LEC placing facilities well in advance of the existence of homes and business (I will call this the franchise scenario). Further, the Hatfield models do not reasonably estimate the costs of a new entrant placing facilities after homes and businesses are completely in place (I will call this the new entrant scenario).

Q. WHAT COST CHARACTERISTICS WOULD EXIST IN THE FRANCHISE SCENARIO?

A. In the franchise scenario the LEC will place facilities well in advance of the actual demand for local service at the time that developments and new construction of homes is about to occur or will possibly occur in order to provide service, or be ready to provide service, to all customers on a timely basis. This leads to relatively high levels of spare capacity at any point in time because growth only slowly catches up with capacity, there is lumpiness in investment, demand forecasting uncertainty, and there are high costs to retroactively expand capacity. Spare capacity leads to relatively high cable material costs.

On the other hand, the franchise scenario, with early placement of facilities, also has some corresponding cost advantages. It provides the opportunity for joint trenching with natural gas lines and limited requirements for cutting through concrete and asphalt and the associated additional labor and safety costs created when working on active streets. This scenario has relatively low structure and installation costs.

Q. WHAT COST CHARACTERISTICS EXIST IN THE NEW ENTRANT SCENARIO?

A. A new entrant may choose to place facilities only after all buildings, business, homes and streets are in place.[20] Under very unlikely conditions, this could lead to relatively high fill factors and relatively low costs for cable material per customer served.[21] On the other hand, the new entrant must face higher costs for structure and installation (e.g., trenches must be dug much more frequently through concrete, asphalt, lawns and flower beds often on busy streets, requiring care to avoid other existing structures). The costs for a new entrant may be greater than the costs in the franchise scenario.

Q. YOU STATED EARLIER THAT THE HATFIELD MODELS DO NOT ADEQUATELY REFLECT EITHER OF THESE TWO SCENARIOS. WHAT COSTS DO THE HATFIELD MODELS REFLECT?

A. The Hatfield models implicitly reflect the low cable material costs of an unrealistic new entrant scenario and yet also reflect structure costs which may be even lower than that which could be obtained in the franchise scenario. The model appears to want to have its cake and eat it too, and then wants some more.

---

[20] Of course, calculating costs for a new entrant begs the policy question of how customers received telecommunications services prior to the new entrant and who pays for such costs.

[21] This requires the critical assumption that the new entrant can somehow capture the entire market and serve all customers at a flash cut point in time. Of course, real entrants have no such opportunity.